**Assessment Schedule – 2022**

**Economics: Demonstrate understanding of the efficiency of different market structures using marginal analysis (91400)**

**Assessment Criteria**

| Achievement | Achievement with Merit | Achievement with Excellence |
|---|---|---|
| *Demonstrating **understanding** of the efficiency of different market structures using marginal analysis* involves: | *Demonstrating **in-depth understanding** of the efficiency of different market structures using marginal analysis* involves: | *Demonstrating **comprehensive understanding** of the efficiency of different market structures using marginal analysis* involves: |
| • providing an explanation of: | • providing a detailed explanation of: | • comparing and / or contrasting: |
|   - the efficiency of a market structure |   - the efficiency of a market structure |   - the efficiency of market structures |
|   - the impact of a change in a market on the short- and / or long-run pricing and / or output decisions of a firm using marginal analysis |   - the impact of a change in a market on the short- and / or long-run pricing and / or output decisions of a firm using marginal analysis |   - the impact of a change in a market on the short- and long-run pricing and / or output decisions of a firm using marginal analysis |
|   - a government policy to improve the efficiency of a monopoly market |   - a government policy to improve the efficiency of a monopoly market |   - the effectiveness of government policies to improve the efficiency of a monopoly market |
|   - pricing and output decisions for perfectly competitive and / or monopolist firms using marginal analysis |   - pricing and output decisions for perfectly competitive and / or monopolist firms using marginal analysis | |
| • using an economic model(s) to illustrate concepts relating to the efficiency of different market structures. | • using an economic model(s) to illustrate complex concepts and / or support detailed explanations relating to the efficiency of different market structures. | • integrating an economic model(s) into explanations relating to the efficiency of different market structures. |

**Evidence**

| Q1 | Sample evidence | Achievement | Achievement with Merit | Achievement with Excellence |
|---|---|---|---|---|
| (a) (i) (ii) | See Appendix. | Two of: <br> • Pmc and Qmc labelled <br> • CS shaded and labelled <br> • no deadweight loss (indicated) <br> OR <br> Two of: <br> • Pac and Qac labelled <br> • CS shaded and labelled <br> • deadweight loss shaded and labelled. | | |
| (b) | MC pricing: subnormal profit. <br> AC pricing: normal profit. | Both correct. | | |
| (c) | Marginal cost pricing would benefit consumers more than average cost pricing as it creates a larger consumer surplus (as shown by the larger shaded area). This is because consumers are paying a lower price ($P_{mc}$ instead of $P_{ac}$), which means the difference between the price actually paid and the price consumers are willing to pay is larger compared to that created under AC pricing. Under MC pricing consumers consume a greater quantity ($Q_{mc}$ instead of $Q_{ac}$) so there are more units from which to gain a surplus compared to AC pricing. <br><br> Marginal cost pricing will see the natural monopolist operating where MC = AR. At this price and quantity ($P_{mc}$ and $Q_{mc}$) market supply (MC) = market demand (AR), so the market is in equilibrium and there is no deadweight loss. This means allocative efficiency is achieved with marginal cost pricing regulation. Under Average Cost pricing the natural monopolist will produce at AC = AR. At this price and quantity ($P_{ac}$ and $Q_{ac}$) market supply (MC) does not equal market demand (AR), so the market is not in equilibrium and a deadweight loss is created (as shaded). This means the natural monopolist is not allocatively efficient when it operates under average cost pricing regulation. | Explains: <br> • consumer surplus under MC pricing is greater due to the lower price OR the higher quantity <br> • allocative efficiency is achieved under MC pricing as the natural monopolist is operating where supply = demand OR there is no deadweight loss <br> • allocative efficiency is not achieved under AC pricing as the natural monopolist is operating where supply does not = demand OR there is deadweight loss <br> • TWO of the following for MC pricing: <br> - subnormal profit earned <br> - AR less than AC | Explains in detail: <br> • consumer surplus under MC pricing is greater due to the lower price AND the higher quantity <br> • allocative efficiency is achieved under MC pricing as the natural monopolist is operating where supply = demand AND there is no deadweight loss <br> OR <br> • AC pricing is not allocatively efficient as the natural monopolist is operating where supply does not equal demand AND there is deadweight loss. <br> • THREE of the following for MC pricing: <br> - subnormal profit earned | Explains in detail: <br> • consumer surplus under MC pricing is greater due to the lower price AND the higher quantity. So there are more units from which to gain a surplus OR the difference between the price paid and the price consumers are willing to pay has increased more than AC pricing <br> • allocative efficiency is achieved under MC pricing as the natural monopolist is operating where supply = demand AND there is no deadweight loss while AC pricing is not allocatively efficient as the natural monopolist is operating where supply does not equal demand AND there is deadweight loss. |

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| The natural monopolist makes a subnormal profit under MC pricing regulation. This is because at $P_{mc}$ and $Q_{mc}$, average costs are greater than average revenue (or TC greater than TR). This means that they are earning less than sufficient to keep them in the industry. If this continues into the long run, they will leave the industry.<br><br>Under AC pricing, the natural monopolist makes a normal profit because at $P_{ac}$ and $Q_{ac}$ average costs = average revenue (or TC = TR). This means that they are earning sufficient to keep them in the industry.<br><br>Under MC pricing regulation, the monopolist is making a subnormal profit and earning less than sufficient to keep them in the industry, which means the Government will have to pay a subsidy to keep them operating in the long run. The subsidy will need to be at least as much as the subnormal profit so that the natural monopoly makes at least normal profit to ensure they stay in the industry. The cost of subsidising means other sectors of the economy may have reduced funding. Alternatively, the Government could nationalise the natural monopoly.<br><br>Under AC pricing regulation, the monopolist is making a normal profit and earning sufficient to keep operating in the long run, which means the Government will not have to pay a subsidy. This is an advantage over MC pricing regulation. | - earning less than sufficient to stay in industry / keep operating<br>- subsidy required.<br><br>• TWO of the following for AC pricing:<br>- normal profit earned<br>- AR = AC<br>- earning sufficient to stay in industry/keep operating<br>- no subsidy required. | - AR less than AC<br>- earning less than sufficient to stay in industry/keep operating<br>- subsidy required.<br><br>• THREE of the following for AC pricing:<br>- normal profit earned<br>- AR = AC<br>- earning sufficient to stay in industry / keep operating<br>- no subsidy required. | • ALL the following for MC pricing:<br>- subnormal profit earned<br>- AR less than AC<br>- earning less than sufficient to stay in industry/keep operating<br>- subsidy required.<br>• ALL the following for AC pricing:<br>- normal profit earned<br>- AR = AC<br>- earning sufficient to stay in industry / keep operating<br>- no subsidy required. |

| N1 | N2 | A3 | A4 | M5 | M6 | E7 | E8 |
|---|---|---|---|---|---|---|---|
| Very little Achievement evidence. | Some Achievement evidence, partial explanations. | Most Achievement evidence. | Nearly all Achievement evidence. | Some Merit evidence. | Most Merit evidence. | Excellence evidence. One part may be weaker. | All points covered. |
| | | | | Must refer to Graph One or Graph Two. | | Integrates relevant information from both graphs into answer. | |

**N0** = No response; no relevant evidence.

| Q2 | Sample evidence | Achievement | Achievement with Merit | Achievement with Excellence |
|---|---|---|---|---|
| (a) (i) (ii) | See appendix. | • AC (only) shifted down and labelled AND supernormal profit shaded<br>OR<br>• AC (only) shifted down and labelled AND new subnormal profit shaded | | |
| (b) (i) | Fixed costs are independent of output i.e. when output level changes, fixed costs remain the same. Interest on loans is a fixed cost because regardless of how many units are produced, the interest cost on each loan repayment on the existing loan remains the same. In this instance, a drop in interest rates would mean a lower interest cost on the existing loan, meaning fixed costs decrease for the individual firm. As fixed costs do not change whether the firm produces 1 unit or 1000 units, a decrease in FC does not affect the marginal cost because it does not change the cost of producing one more unit. It does, however, affect the total cost of production as $TC = FC + VC$. A lower FC leads to a lower TC, hence a lower AC (as $AC = TC/Q$).<br>The firm with an existing larger loan (Firm A) will experience a larger drop in average cost as they will gain more savings from their interest cost (idea of equal % of a larger loan equates to a bigger reduction in interest cost), hence the new AC curve is drawn lower for Firm A than the firm with a smaller existing loan (Firm B). | Explains:<br>• fixed costs are independent of output. | Explains in detail:<br>• fixed costs are independent of output AND do not affect MC OR fixed costs are independent of output AND hence only affect AC<br>• Firm A's AC drops more (drawn lower) because the lower interest rate decreases their interest / fixed costs more OR Firm B's AC drops less (drawn higher) because the lower interest rate decreases their interest / fixed costs less. | Explains in detail:<br>• fixed costs are independent of output AND do not affect MC AND affect AC<br>• Firm A's AC drops more (drawn lower) because the lower interest rate decreases their interest / fixed costs more AND an equal % of a larger loan equates to a larger cost savings OR Firm B's AC drops less (drawn higher) because the lower interest rates decrease their interest / fixed costs less AND an equal % of a smaller loan equates to a smaller cost savings. |
| (ii) | Both firms maximise profits (or minimise losses) where $MC = MR$. As the MC curve has not shifted (MC has remained the same), the profit maximising level of output has also remained the same at $Q_1$ where $MC=MR$. At output $Q_1$, Firm A makes a supernormal profit as their $AR > AC$ (or $TR > TC$) and they are making more than sufficient to stay in the industry. Firm B still makes a subnormal profit (but smaller than before) as their AC is still $> AR$ (or $TC > TR$) and they are not making sufficient return to stay in the industry. | Explains:<br>• no change in output for both firms due to ONE of:<br>  - no change in MC<br>  - profit maximised point still at Q1<br>  - where MC = MR. | Explains in detail:<br>• no change in output for both firms due to TWO of:<br>  - no change in MC<br>  - profit maximised point still at Q1<br>  - where MC = MR. | Explains in detail:<br>• no change in output for both firms due to ALL of:<br>  - no change in MC<br>  - profit maximised point still at Q1<br>  - where MC = MR. |

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| (c) (i) (ii) | See Appendix. | Two of: <br> • market supply curve shifted left with higher price and lower quantity labelled <br> • MR=AR line shifted up to normal profit position and labelled <br> • higher price and quantity labelled for the firm where MC = new $MR_2$. | | | |
| (iii) | Firms making subnormal profit will leave the market. They can do so as there are no barriers to exit. This decreases market supply (S to $S_2$ on Graph Five) resulting in the price increasing to $P_2$. Firms are price takers and too small to influence the market, so they will take the higher price, hence their MR=AR=D shifts up to $MR_2=AR_2=D_2$. In the long run, at profit maximisation level of output $Q_{LR}$ (i.e. where $MC=MR_2$) the firm makes normal profit as average cost equals average revenue (or TR = TC). Each firm is earning just sufficient to stay in the industry and there is no more incentive to enter / leave the market. | Explains: <br> • In the long run normal profits are made due to ONE of: <br> - market supply decreases due to no barriers to exit <br> - price increases as each firm is a price taker <br> - AC = AR (TC=TR) <br> - each firm is earning just sufficient to stay in the market / no more incentive to leave market. | Explains in detail: <br> • In the long run normal profits are made due to THREE of: <br> - market supply decreases due to no barriers to exit <br> - price increases as each firm is a price taker <br> - AC = AR (TC=TR) <br> - each firm is earning just sufficient to stay in the market / no more incentive to leave market. | Explains in detail: <br> • In the long run normal profits are made due to ALL of: <br> - market supply decreases due to no barriers to exit <br> - price increases as each firm is a price taker <br> - AC = AR (TC=TR) <br> - each firm is earning just sufficient to stay in the market / no more incentive to leave market. |

| N1 | N2 | A3 | A4 | M5 | M6 | E7 | E8 |
|---|---|---|---|---|---|---|---|
| Very little Achievement evidence. | Some Achievement evidence, partial explanations. | Most Achievement evidence. | Nearly all Achievement evidence. | Some Merit evidence. <br><br> Must refer to Graph Three and Graph Four OR Graph Five Graph Six. | Most Merit evidence. | Excellence evidence. One part may be weaker. <br><br> Integrates relevant information from all graphs into answer. | All points covered. |

**N0** = No response; no relevant evidence.

| Q3 | Sample evidence | Achievement | Achievement with Merit | Achievement with Excellence |
|---|---|---|---|---|
| (a)<br>(i) | See Appendix. | Two of:<br>• $MC_1$ curve shifted left to intersect $AC_1$ at $AC_1$'s minimum point<br>• higher price and lower quantity labelled<br>• new supernormal profit shaded and labelled. | | |
| (ii) | Following an increase in variable costs, the monopolist's MC curve and AC curve both increase (as shown by $MC_1$ and $AC_1$). At the original output of $Q_e$ $MC_1 > MR$, meaning the additional cost incurred in producing the last / additional unit is greater than the additional revenue gained from selling it, which means the monopoly is making marginal losses. This is true for all units between $Q_e$-$Q_1$. To maximise profit, it will decrease output to $Q_1$ where $MC_1 = MR$ at profit maximisation. | Explains that an increase in variable costs will lead to the monopolist decreasing output due to ONE of:<br>• MC is greater than MR<br>• marginal losses being made<br>• it is where $MC_1 = MR$ and profits are maximised. | Explains in detail that an increase in variable costs will lead to the monopolist decreasing output due to TWO of:<br>• MC is greater than MR<br>• marginal losses being made<br>• it is where $MC_1 = MR$ and profits are maximised. | Explains in detail that an increase in variable costs will lead to the monopolist decreasing output due to ALL of:<br>• MC is greater than MR<br>• marginal losses being made<br>• it is where $MC_1 = MR$ and profits are maximised. |
| (b) | See Appendix. | Two of:<br>• $MR_1$ curve shifted right to halfway between the origin and $AR_1$<br>• higher price and higher quantity labelled<br>• new supernormal profit shaded and labelled. | | |
| (c) | The monopoly continues to make a supernormal profit in the long run in both instances. This is because monopolies are price makers and they have strong barriers to entry (e.g. high set up costs, technology, regulations) that will prevent other firms from entering the market to drive down their prices (as seen by an increase in price from $P_e$ to $P_1$ and $P_e$ to $P_2$ respectively).<br>The increase in demand is more beneficial for the monopoly as the supernormal profit made is larger than that made when variable costs increase. It is also larger than before while the supernormal profit made when variable costs increase is smaller than before. | Explains:<br>• the long run profit for a monopoly in either instance is supernormal due to strong barriers to entry OR example of barriers (high set up costs, technology, regulations) OR so other firms are prevented from entering the market<br>• Increased demand is more beneficial for monopoly because their profit increases | Explains in detail:<br>• the long run profit for a monopoly in both instances is supernormal due to strong barriers to entry AND example of barriers (high set up costs, technology, regulations)<br>• increased demand is more beneficial for monopoly due to ONE of: | Explains in detail:<br>• the long run profit for a monopoly in both instances is supernormal due to strong barriers to entry (gives examples) AND so other firms are prevented from entering the market<br>• increased demand is more beneficial for monopoly due to BOTH of: |

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| This is because in the case of the increase in demand both the price and output levels increase whereas in the case of the increase in variable costs although there is an increase in price this increase is smaller ($P_1$ is lower than $P_2$). Additionally, when variable costs increase the small increase in price is offset by the decreased output leading to a smaller supernormal profit than increased demand. That is also why the supernormal profit is smaller than before. | OR the supernormal profit is bigger than increase in VC. | - supernormal profit made after the increase in demand increases due to increased output and price levels<br>- supernormal profit made after the increase in variable costs decreases due to the decreased output offsetting the small increase in price.<br><br>(Accept supernormal profit made after the increase in demand is bigger as the increase in price is greater than the increase in price due to the increase in VC.) | - supernormal profit made after the increase in demand increases due to increased output and price levels<br>- supernormal profit made after the increase in variable costs decreases due to the decreased output offsetting the small increase in price. |

| N1 | N2 | A3 | A4 | M5 | M6 | E7 | E8 |
|---|---|---|---|---|---|---|---|
| Very little Achievement evidence. | Some Achievement evidence, partial explanations. | Most Achievement evidence. | Nearly all Achievement evidence. | Some Merit evidence. | Most Merit evidence. | Excellence evidence. One part may be weaker. | All points covered. |
| | | | | Must refer to Graph Seven or Graph Eight. | | Integrates relevant information from both Graph Seven and Graph Eight into answer. | |

**N0** = No response; no relevant evidence.

## Cut Scores

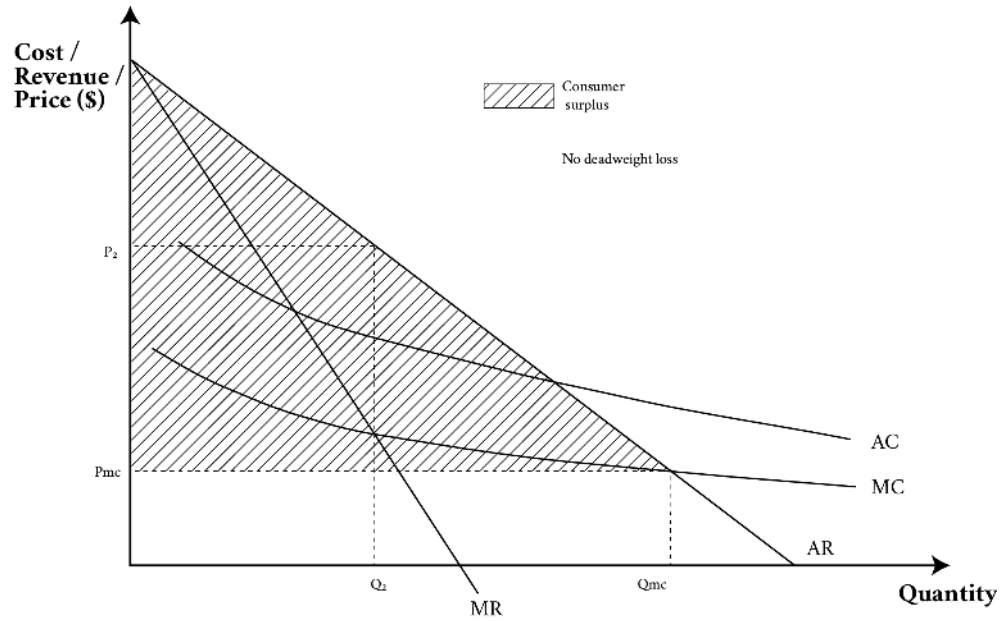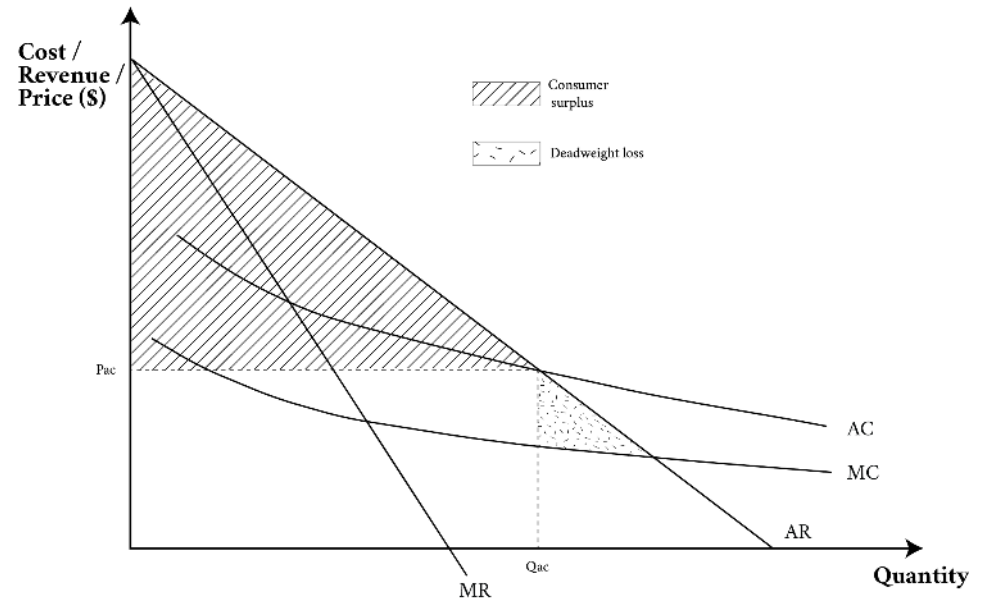| Not Achieved | Achievement | Achievement with Merit | Achievement with Excellence |
|---|---|---|---|
| 0 – 6 | 7 – 13 | 14 – 18 | 19 – 24 |

# Appendix

## Question One (a)(i)

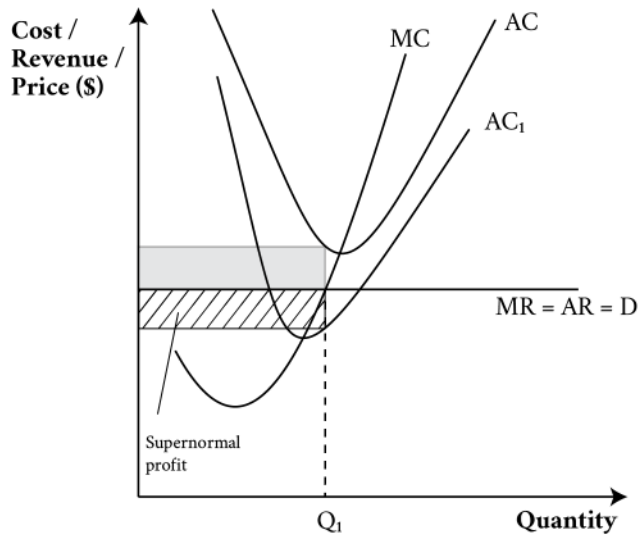**Graph One: Natural monopoly operating under marginal cost pricing regulation**



## Question One (a)(ii)

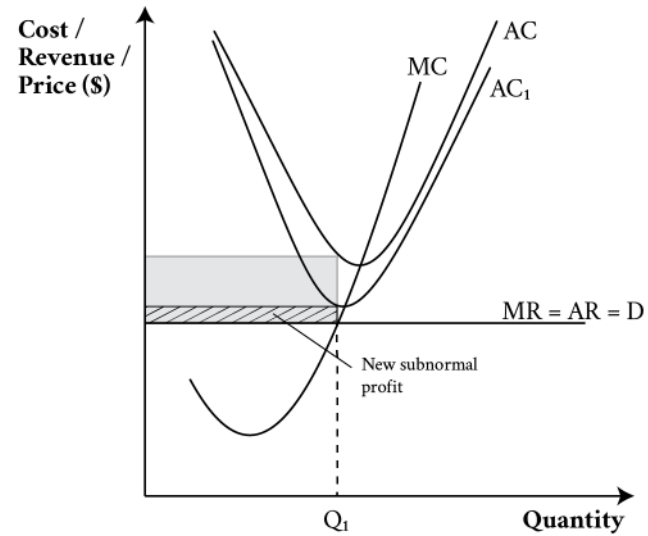**Graph Two: Natural monopoly operating under average cost pricing regulation**

**Question Two (a)(i)**
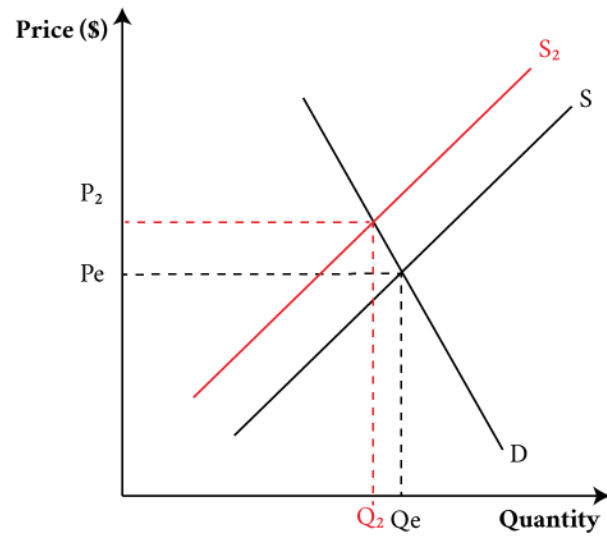
**Graph Three: Individual firm with a larger loan (Firm A)**



**Question Two (a)(ii)**

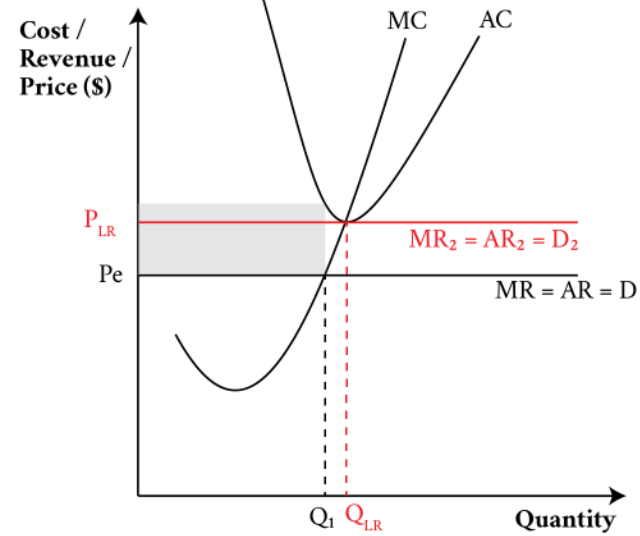**Graph Four: Individual firm with a smaller loan (Firm B)**

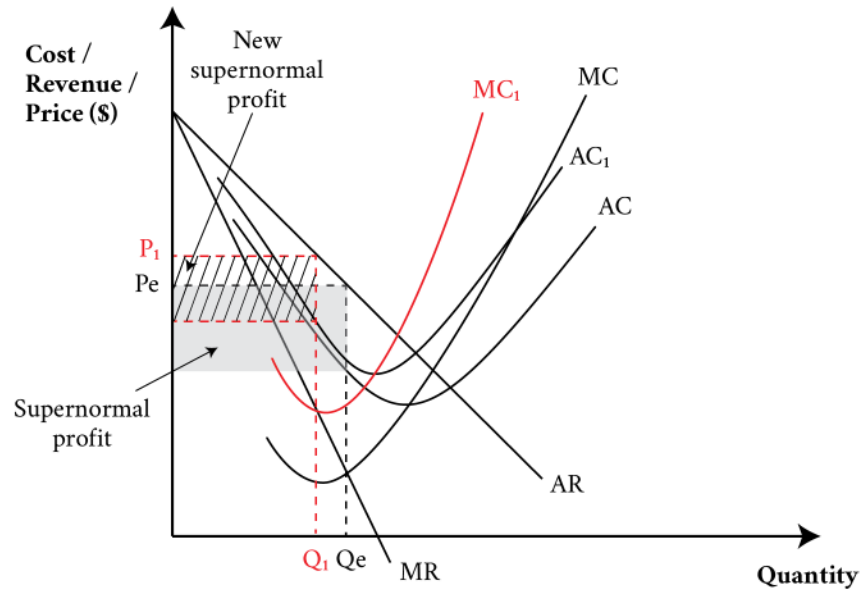**Question Two (c)(i) & (ii))**

## Graph Five: The market



## Graph Six: The individual firm

**Question Three (a)(i)**

**Graph Seven: A monopoly – impact of an increase in variable costs**



**Question Three (b)**

**Graph Eight: A monopoly – impact of an increase in demand**